# Water Tank Level Monitor
## INSTRUCTION MANUAL

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This Operation Manual is part of this product and should be kept in a safe place for future reference. It contains important notes on setup and operation.

## 1. INTRODUCTION

Please read this instruction manual thoroughly to fully understand the correct operation of your Water Tank Level Monitor. The following user guide provides step by step instructions for installation, operation and troubleshooting.

### 1.1 Package Contents

- 1 x Indoor receiver
- 1 x Water tank transmitter
- Mounting screws
- Instruction manual

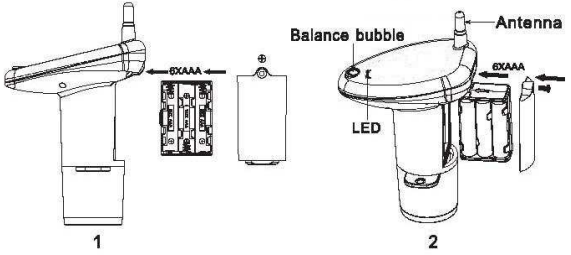
### 1.2 Features

- 12/24 hour time display
- Time alarm
- Indoor temperature
- Tank temperature
- Monitors water tank level
- Level displayed on a 10 element LCD bar graph for water level
- Records min. and max. for indoor and tank temperature/level
- TANK level high/low alarm mode
- All alarm ON/OFF option system
- TANK empty alert
- Transmitter low battery indicator
- Tank level updated 30s or 3 minutes

## 2. INSTALLATION

### 2.1 Water Tank Sensor Battery

**Note**: Please note the polarity when inserting/replacing batteries in the unit, failure to do so may result in permanent damage. Use good quality alkaline batteries or rechargeable batteries.



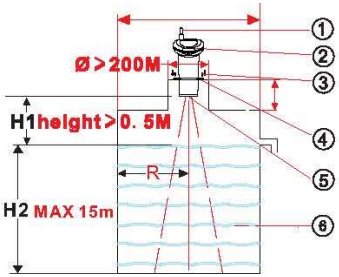

1) Open the battery door, remove the battery box;

2) Insert 6 x AAA 1.5V alkaline batteries into the battery box, observing the correct polarity. Then put back the battery box according to the marking direction.

### 2.2. Set Up Sketch

The following picture illustrates transmitter installation:

1. Antenna
2. Balance bubble
3. Screw
4. Bracket
5. Sensor
6. Tank



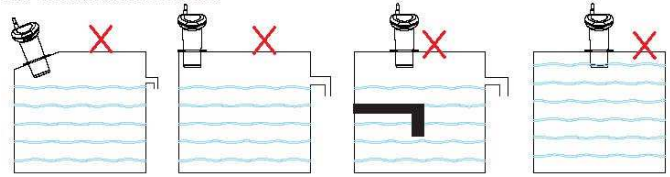
Please pay attention to the following issues in installation:

1) The distance between transmitter bottom and highest water surface must be 0.5m (1.64ft) or more.

2) The maximum depth the unit can measure is 15m (49.2ft).

3) Observe the balance bubble on the sensor to ensure it is installed at a level horizontal position.

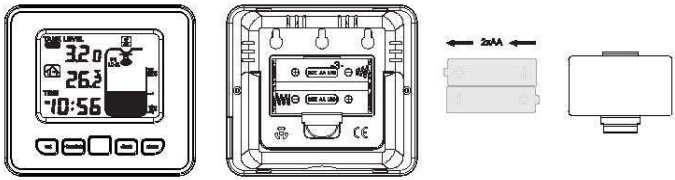
**2.3 Examples of Wrong Installation**



1 2 3 4

1) The sensor is not installed at a level horizontal position.
2) The sensor is too close to the TANK wall.
3) There are solid objects in the tank.
4) The transmitter bottom is dipped in the water (or other liquids in tank)

**2.4 Indoor Receiver Battery Installation**




**FRONT VIEW** **BACK VIEW**

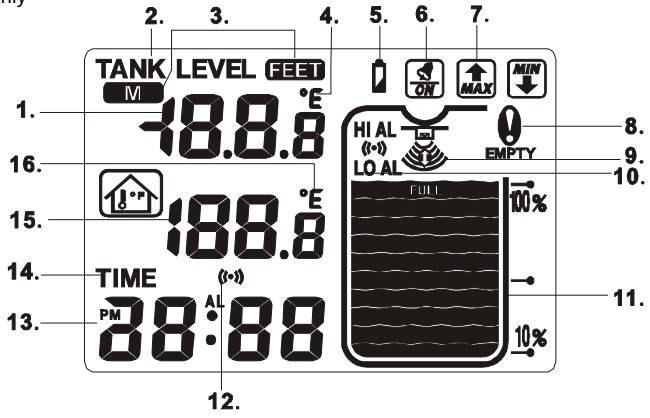
Open the base station's battery cover located at the back of the unit and insert 2 x AA, 1.5V alkaline batteries into the battery compartment and close the battery cover.

### 2.5 Initial Set up

First, insert the batteries into the wireless solar transmitter (6 x AAA) and then insert batteries immediately into the LCD display base unit (2 x AA). Once the batteries are in place, all segments of the LCD will light up briefly.

## 3. OVERVIEW

The following illustration shows a normal LCD display for description purposes only




1. Value display area (Fig. 1 & 2)

Fig.1

Fig.2

2. Tank temperature and water level icon
3. Water level unit
4. Tank temperature unit (ºC/ºF)
5. Outdoor low battery indicator

6. Alarm activation icon
7. Min. and max. indicator icon
8. Empty alert icon
9. RF signal indicator
10. Tank level high and low alarm indicator
11. Water tank depth icon
12. Time alarm indicator

Fig.3

13、Time and alarm value area ( Fig 3 )
14、Indoor temperature value display area
15、Indoor temperature unit

## 4. PROGRAM MODE

### 4.1 SET TANK Depth

When the display unit is powered up, the LCD display activates for 3 seconds and makes a ”Beep”. Then the system displays tank depth setting mode display of "0.00" and empty tank icon flashes（Fig.4).

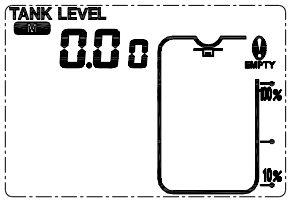



Fig.4

Press +/MAX/MIN key or -/TANK key to increase or decrease tank depth. Hold +/MAX/MIN key or -/TANK key to increase or decrease tank depth at greater step. Press the SET key into the Air Gap setting.

● **NOTE:** To record correct measurement of tank depth (see H1+H2 in sketch of 2.2), calculate from the bottom of the tank transmitter to bottom of your tank. Distance:0.5M(min)-15.0M(max) or 1.64” (min)-49.2” (max)

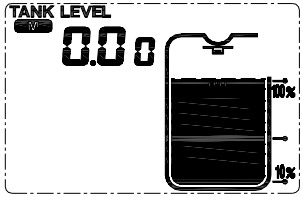



Fig.5

Display of "0.00" and full tank icon flashes（Fig.5）. Press +/MAX/MIN key or -/TANK key to increase or decrease air gap. Long press +/MAX/MIN key or -/TANK key to increase or decrease air gap at greater step. Press the SET key to exit depth setting

● **NOTE:** To record correct measurement of Air Gap(see H1 in sketch of 2.2), calculate from the bottom of the tank transmitter to the maximum fluid level of tank. Distance:0.5M(min)-15.0M(max) or 1.64” (min)-49.2” (max)

If there’s no key operation in depth setting mode for longer than 15s the unit will switch to normal display mode automatically. (There will be measurement errors if the tank depth and air gap are not set correctly).

If you miss this step, tank depth and air gap can be set later**.** In normal operation mode, press and hold SET and ALARM keys for 5 seconds to set Tank Depth and Air Gap values. The setting steps are the same as above described.

### 4.2 SET TIME

In normal display mode press SET key for 3 seconds to enter SET mode.

● 12/24H: 12Hr or 24Hr will flash. Press +/MAX/MIN or -/TANK key to select

12H or 24H. Press SET key to move to hour setting.

● HOUR: Hour value will flash. Press +/MAX/MIN or -/TANK key to increase or decrease hour value. When hour value is set press SET key to set minute value.

● MINUTE: Minute value will flash. Press +/MAX/MIN or -/TANK key to increase or decrease minute value. When minute value is set press SET key to set temperature unit.

**4.3 SET TEMPERATURE UNIT**

● Temperature unit will flash. Press +/MAX/MIN or -/TANK key to select temperature unit of °C or °F. After temperature unit is set press SET key to set tank level unit.

**4.4 SET TANK LEVEL UNIT**

● Tank level unit will flash. Press +/MAX/MIN or -/TANK key to select water level unit of miter or feet. After tank level unit is set press SET key to exit.

**4.5 CHECK AND RESET MIN/MAX VALUE**

● In normal display mode press +/MAX/MIN key once to check the max value of indoor temperature and tank level or tank temperature.

● Press +/MAX/MIN key again to check the min value of indoor temperature and tank level or tank temperature.

● Press +/MAX/MIN key again to exit.

● In the MIN/MAX mode press SET key, min or max icon and value will flash. Press the +/MIN/MAX key once, the displayed minimum or maximum record will be reset to current value. Press SET key to reset the next minimum or maximum record.

**4.6 TANK LEVEL AND TANK TEMPERATURE SWITCH**

● In normal display mode press -/TANK key to switch from tank level display to tank temperature display or switch from tank temperature display to tank level display.

● When transmission signal is lost long press the -/TANK key for 5 seconds to re-connect with transmitter.

**4.7 ALARM**

#### 4.7.1 SET TIME ALARM

In normal display mode press ALARM key. Previously set time alarm will display. Press SET key 3 seconds to set alarm hour. Alarm hour will flash. Press +/MAX/MIN or -/TANK key to increase or decrease alarm hour. After alarm hour is set press SET key to set alarm minute. Press +/MAX/MIN or -/TANK key to increase or decrease alarm minute. After alarm minute is set press SET key to set tank level high or low alarm.

#### 4.7.2 SET TANK LEVEL HIGH AND LOW ALARM

After finish time alarm setting previously set tank level alarm value will flash. Press +/MAX/MIN or -/TANK key to increase or decrease high alarm value. After tank level high alarm is set press SET key to set tank level low alarm. Previously set tank level low alarm value will flash. Press +/MAX/MIN or -/TANK key to increase or decrease low alarm value. After tank level low alarm is set press SET key to exit.

#### 4.7.3 ENABLE OR DISABLE ALARM BUZZER

In default setting the alarm buzzer is enabled. To disable the alarm buzzer press ALARM key for 5 seconds. The alarm icon will disappear. Press ALARM key 5 seconds again to enable alarm buzzer. The alarm icon will appear.

#### 4.7.4 EMPTY ALERT

When water level is less than 20% of tank depth the icon will display.


## 5. DEFAULT VALUE

1. Time：0:00—23:59 (default: 0:00)
2. 12HR/24HR format：(default: 24HR)
3. Temperature unit：°C/°F (default: °C)
4. Water level：meter/feet (default: m)
5. TANK LEVEL/TANK TEMP display: (default: TANK TEMP)
6. Alarm set：0:00—23:59 (default: 12:00, disable)
7. Water level HI-alarm：0 – 15m（0 feet -49.2 feet）(default: 10m, OFF)
8. Water level LO-alarm：0 – 15m（0 feet -49.2 feet）(default: 2m, OFF)

## 6. SPECIFICATIONS

Transmission distance: max.100 metres (in open space)

Frequency: 433MHz

Indoor temperature range: 0 - -50℃,

Resolution: 1℃,

Accurate：+/-1℃,

Tank temp measure range：-40 - -60℃,

Resolution: 1℃,

Accurate：+/-1°

Water level measure range：0 - 15m,

Resolution: 0.01m,

Accurate: +/-0.03m

Alarm duration: 120 sec

**Power consumption**

- Indoor receiver: 2 x AA 1.5V batteries
  Life: Minimum 12 months
- Tank transmitter: 6 x AAA 1.5V batteries
  Life: Minimum 24 months